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from near Princeton, N. J., *Helonias bullata* from the same locality, and *Mertensia Virginica* from Rocky Hill, N. J.

Dr. Morong reported *Silene Pennsylvanica* with white flowers from Woodhaven, Long Island.

A general discussion on the occurrence of albinism followed, in which remarks were made by Dr. Morong, Miss Vail, Mrs. Britton and Mr. Lighthipe.

Index to Recent Literature Relating to American Botany.

Adventitious Budding in Æsculus Hippocastanum. Walter C. Kerr (Proc. Nat. Sci. Assoc. Staten Island, April 8, 1893).

Ascyrum Crux-Andreæ (Meehan's Month, iii. 65).

Bacteria in Vegetable Tissue—Non-Parasitic. H. L. Russell (Bot. Gaz. xviii. 93).

Beitrage zur Kenntniss exotischer Sphagna. C. Warnstorf. (Hedwigia, 1893, 1–17, plates i–iv. reprinted).

Several corrections of American specimens and species are made, and all those who have been sending material to Dr. Warnstorf for naming will do well to consult this publication. Several changes are made in Macoun's Canadian mosses, and the range of several species is extended. *S. Labradorense*, Warnst., *S. Lindbergii*, Schpr., *S. Floridanum*, Cardot, *S. Mendocinum*, S. & L., *S. Dusenii*, C. Jensen, *S. Girgensohnii*, Russ., var. and *S. Garberi*, L. & J., are described and figured.

Botanical Laboratory in Pharmaceutical Manufacture—The work of a. John S. Wright (Science xxi. 183).

Botanical Notes from Texas. E. N. Plank. (Gard. and For. vi. 162.) Notes on *Sesbania Cavanillesii*, *S. vesicaria*, *Oxalis dichondræfolia*, *Prunus Caroliniana*, *Xanthoxylum Fagara*, *Clematis Drummondii* and others.

Botanical Survey of Nebraska. Report on Collections made in 1892 (pp. 46, Univ. Neb. 1893).

This pamphlet contains (1) Flora of the Sand Hill Region of Sheridan and Cherry Counties, and List of Plants collected on a Journey through the Sand Hills in July and August, 1892, by Jared G. Smith and Roscoe Pound, including sixteen plants new to the State; (2) Notes on the Canon Flora of Sioux County with List of Plants collected in July and August, 1892, by A. F. Woods, with some twenty additions to the State Flora, *Volvaria viscosa*, Clements and *Mycena acutoconica*, Clements, being two new Fungi; (3) Miscellaneous Additions to the Flora of the State, and new or noteworthy Species from various Localities including *Coprinus granulosus*, *Inocybe tuberosa*, *Pholiota speciosa* and *Lepiota avellanea*, new species described by Mr. Clements.

Bouteloua—Les Fleurs des. H. Baillon (Bull. Mens. Soc. Linn. Paris, i. 1087, 1088).

Brasenia peltata, Pursh—The Glandular Hairs of. Ida A. Keller. (Proc. Acad. Nat. Sci. Phila. 1893, 188).

Calypso borealis (Gard. Chron. xiii. 421).

Carex baccans C. B. Clarke (Bot. Mag. t. 7288).

Carnivorous Plants—Recent Studies of. Jared G. Smith. (Am. Nat. xxvii. 413).

Catabrosa aquatica—Les Fleurs du. H. Baillon (Bull. Mem. Paris, i. 1072).

Cattleya iricolor. (Bot. Mag. t. 7287).

Chara—Description of a new fossil Species of. F. H. Knowlton (Bot. Gaz. xviii. 141–142; illustrated).

Chara Stantoni. From the Upper Cretaceous of Wyoming.

Contribution to the Biology of the Organism causiug Leguminous Tubercles. Geo. F. Atkinson (Bot. Gaz. xviii. 157–166; three plates).

Corallorhiza—The Genus. M. B. Thomas (Bot. Gaz. xviii. 166–170 two plates).

Cretaceous Plant Population—The Probable Physiognomy of the. Conway McMillan (Am. Nat. xxvii. 336).

Cypripedium Chamberlaini. W. H. Gower (Garden, xliii. 304 with colored plate).

Cypripedium spectabile.—Is it poisonous to the touch? Henry J. Jesup (Bot. Gaz. xviii. 142–143).

Referring to a note in the BULLETIN, vi. 15, Prof. Jesup adduces facts in support of the theory that this plant may excite symptoms similar to poisoning by *Rhus.*

Datos para el estudio de la produccion del Chicle. Fernando Altamirano (El Estudio, iv. 251).

With illustration of *Asclepias laungnosa*, H. B. K.

Decay in the Apple Barrel. B. D. Halsted (Pop. Sci. Month. xliii. 76, illustrated).

Enumeration of the Plants collected by Dr. Thomas Morong in Paraguay, 1888–90. By Thomas Morong and N. L. Britton with the assistance of Miss Anna Murray Vail. Contributions from the Herbarium of Columbia College, No. 35 (Annals New York Acad. Sci. vii. 45–280).

This handsomely printed volume of 235 pages describes that portion of the Paraguayan flora which was collected by Dr. Morong during a recent visit of two years to that country. In the course of that time the region within a hundred miles of Asuncion, and the uninhabited portions of the Gran Chaco wilderness, for 400 miles up the little known Pilcomayo River, was very thoroughly searched. The collection, including the Mosses, foots up not quite 1000 species, nearly one-tenth of which are new. It represents 106 orders, the most numerous being the Compositæ, Leguminosæ, Gramineæ, Cyperaceæ, Euphorbiaceæ, Solanaceæ, Malvaceæ and Filices, which are the most common orders in South America. Of the five species of Palms enumerated, two are described as new to science; of the thirty-six Euphorbiaceæ, five; of the ten Myrtaceæ, four; and of the ten Asclepiadaceæ, five, the most remarkable, perhaps, being the last. The new species are described by Drs. Britton and Morong, and all the determinations were made after a careful comparison of the plants with the collections at Columbia College and Kew. In this labor the authors were assisted by such eminent European botanists as J. G. Baker, Edmund Baker, A. Cogniaux, N. E. Brown, M. T. Masters, A. Franchet, Casimir De Candolle and R. A. Rolfe, so that there is every reason for regarding the identification of the species as correct. A large part of the value of this enumeration lies in the notes, which are very full. The peculiarities of nearly all the species named in measurement, color, habitat, habit, and other interesting particulars concerning their economical uses and surroundings, are taken from the field notes of Dr. Morong, which were made while the specimens were fresh, and after many inquiries made among the natives of the country as to the local names and uses. There is scarcely a species given which might not at once be identified by any visiting botanist from these notes here given, so that future explorers of this region will have an easy time of it, so far as this enumeration goes.

It should be placed on record as a happy circumstance that a North American botanist in this distant and not easily accessible South American country should have met with such remarkable success as attended the work of Dr. Morong. After a voyage of seventy days across the Atlantic, in which not a single storm occurred, and after a sojourn of two years, much of it spent in a remote wilderness inhabited only by roving Indians and wild animals, with not a mishap or a single day's illness to detract from his good fortune, the collector circumnavigates the South American continent, and returns to his own land in perfect health. Of the 12,000 or more specimens collected, not one is lost, and within three years from the time of his return the whole collection is collated, enumerated and published—a fact which is thought to be without a parallel. A. H.

Enumeration of the Plants collected in Bolivia by Miguel Bang with descriptions of new Genera and Species. Henry H. Rusby (Mem. Torr. Bot. Club, iii. pp. 67; issued April 27, 1893).

The collections made by Dr. Rusby in Eastern Bolivia during the years 1885 and 1886 proved so rich in novelties, and in species hitherto very little known, that he determined, if it should become possible to supplement his material by additional specimens from the same region, and this was the more especially desirable from the fact that owing to the conditions under which Dr. Rusby made his way through the country, he was able in many instances to bring away but a single specimen of a species. Opportunity for continuing his work was afforded in 1889 by the engagement of Miguel Bang, a Danish gardener of La Paz, to collect material in bulk and ship it to New York. The results have more than justified the arrangement, for in addition to securing some of the best things obtained by Dr. Rusby a very large number of additional new species have been obtained, and most of them in sufficient quantity to make up twenty complete sets, which have been placed in the principal herbaria of America and Europe.

The present paper enumerates the Polypetalæ and Gamopetalæ up to Lobeliaceæ of Mr. Bang's numbers from 1 to 1000, and describes 90 species as new, besides defining a number of *nomina nuda.* The remainder of the plants included between these numbers will form a second paper, to be issued in the autumn of the present year on Dr. Rusby's return from Europe, where he is now engaged in making comparisons with named material at Kew and Berlin, and subsequent papers will complete the account of the collections, the accumulation of which, it is hoped, will continue over several years longer. Mr. Bang's numbers have now reached about 2000, and taken together with Dr. Rusby's collection represent over 3500 species. These, with the collections of Mandon and Weddell, the best sets of which are in the Paris Herbarium, and those of Pearce and Pentland at Kew, probably indicate about 5000 species from Bolivia. Dr. Otto Kuntze has recently made some collections in the territory, and we understand is now engaged in their determination. It is a cherished plan of Dr. Rusby and the writer to ultimately bring an account of all this material together in the form of a Flora of Bolivia; but time alone will show whether this enterprise can be brought to a successful termination. N. L. B.

Erythronium—The Range of Variation in Species of. M. E. Meads (Bot. Gaz. xviii. 134–138; one plate).

Flora of Montreal Island—Changes in the. Robert Campbell (Can. Record Sci. v. 294).

Forests of the South—The. Henry L. Tolman (Gard. and For. vi. 158).

Fossil Diatoms in Philadelphia beneath the New Girls' Normal School Building—Marine clays overlying fresh-water clays at some other localities. Lewis Woolman (Microscopical Bulletin, ix. 33–34).

The author calls attention to the fact that in most of the clays that lie immediately beneath the surface of the old city proper, and which have an elevation of less than 40 feet above mean high tide, there is a considerable showing of sponge spicules and diatoms. The diatoms are both fresh-water and marine, the latter predominating. There is given a list of 31 species from the deposit at Thirteenth and Spring Garden streets, found thirteen feet beneath the surface. C. H. K.

Frost Freaks of the Dittany. Lester F. Ward (Bot. Gaz. xviii. 183–186; one plate).

Note on *Cunila Mariana* as a "frost-weed."

Galinsoga parviflora in Italia—Sulla. P. Bargagli (Bull. Soc. Bot. Ital. 1893, 151).

George Vasey: A Biographical Sketch. Wm. N. Canby and J. N. Rose (Bot. Gaz. xviii. 170–183, with portrait).

Habenaria fimbriata. Henry G. Jesup (Bot. Gaz. xviii. 189, 190, illustrated).

Note on flowers of this species with the lip entire

Hardwood Trees of Illinois—Notes on the, VI., VII. J. Schneck (Hardwood, iii. Nos. 4, 5).

Herbarium—The Growth of the General. (Quarterly Bull. Univ. Minn. i. 70.)

How to Know the Wild Flowers. Mrs. William Starr Dana, illustrated by Marion Satterlee (298 pages, 1893, Chas. Scribner's Sons).

This attractive little book merits the success which it has already met with, not only for its numerous and excellent illustrations, but for the clear and simple descriptions of our common flowers, as well as for the interesting information of a scientific or literary nature. The arrangement is by colors, and seasons and the habits, uses and popular names receive due mention. There are 104 full-page illustrations, which alone would make it easy to recognize most of the pretty wild flowers. E. G. B.

Hybrid Oak—Another. A. S. Hitchcock (Bot. Gaz. xviii. 110; with plate). The record of the discovery of an interesting tree near Manhattan, Kansas.

Hymenomyceteæ of Orleans Co., N. Y. Chas. E. Fairman (Proc. Rochester Acad. Sci. ii. 154). 126 species are catalogued.

Lagoa Santa (Brezil) Etude Geographique Botanique. Eug. Warming (Rev. Gen. de Bot. v. 145; with illustrations).

Lepismium Knightii, Pfr. (Monats. Kakteenk. iii. 40; with illustration).

Liliaceens Brasiliens—Die Officinellen. Theodor Peckholt (Pharm. Rundsch. xi. 80).

Marantaceæ nonnullæ Ecuadorienses. H. Eggers (Bot. Centralbl. liii. 305). *Calathea Petersenii*, *C. Sodiroi* and *Ischnosiphon Morlæ* are described as new, and two of the species illustrated.

Mitchella repens. (Meehan's Month. iii. 49, with colored illustration.)

Mexico—Additions to the Phænogamic Flora of. B. L. Robinson and H. E. Seaton (Proc. Am. Acad. Arts and Sci. xxviii. 103).

New species are described in the genera *Thalictrum*, *Polygala*, *Abutilon*, *Pavonia*, *Astragalus*, *Stylosanthes*, *Cotyledon*, *Sedum*, *Cuphea*, *Fuchsia*, *Cyclanthera*, *Piqueria*, *Stevia*, *Eupatorium*, *Brickellia*, *Sabazia*, *Verbesina*, *Tridax*, *Schkuria*, *Senecio*, *Cacalia*, *Cnicus*, *Perezia*, *Lobelia*, *Arctostaphylos*, *Gentiana*, *Halenia*, *Krynitzkia*, *Russelia*, *Castilleia*, *Pedicularis*, *Dicliptera*, *Salvia*, *Spiranthes*, and *Dioscorea*.

Monilia fructigena—On. James Ellis Humphrey (Bot. Gaz. xviii. 85, with plate).

Myxomycetes—On two new or imperfectly known. W. C. Sturgis (Bot. Gaz. xviii. 186, 187, one plate).

Description and illustration of *Comatricha cæspitosa*, n. sp., and *Physarum sulphureum*, Alb. & Schw.

Naiadaceæ of North America. Thomas Morong (Mem. Torr. Bot. Club, vol. 3, No. 2, pp. 65, 55 plates; issued March 15, 1893).

So little has been done with the order named above, since the work of Chamisso in Linnæa, vol. 2, 1827, and the 3d Mantissa of Roemer and Schultes, which appeared after the Linnæa, though in the same year, that one feels constrained to welcome a publication on it, especially coming from an author who has studied it for many years; and if we cannot agree in all points with him, we at least know it is the outcome of honest work and ripe judgment.

The difficulties attending the order, especially its principal genus (*Potamogeton*), are by no means small, and while we advance slowly in the acquired knowledge of it, it may be trusted, that it is sure.

In another place (*) I have mentioned more particularly the geographical distribution of Dr. Morong's Monograph, and I propose to take up some other points here.

The question of hybrids has lately been much written on in Great Britain, and while it would be ridiculous to deny the existence of natural hybrids, I do not believe they are as common as asserted. Of course, those who support it have a strong position, as it is exceedingly difficult to prove they are not, without years of careful work. I have myself made bees produce hybrids between *Verbascum floccosum*, and *V. Thapsus*, L., and when these hybrids flowered I found the bees showed evident preference for their flowers, over those of either parent. In *Potamogeton* I have attempted to hybridize with several species, but as yet without success. I have had plants named as continental hybrids for Britain, one of whose supposed parents does not exist as an indigenous species (or otherwise ?) in our own country; this is met by the hybrid-man by supposing that its parent did exist but has died out. Geology clearly tells us that many species did exist in many parts where they certainly are not known to exist now, so here again we have a difficulty to find an adequate answer, and the query of proof is greater still. Within easy walk of my home *Potamogeton densus*, *P. perfoliatus* and *P. crispus* grow in a mill-head, and adjacent stream in beds intermixed, yet for twenty years I have never seen a specimen that I could not refer with safety to either species. The water is in rather rapid movement, I admit, and doubtless a still ditch or pond would be more likely to produce hybrids, especially if teeming with pond-life; but the fact remains that the three species are in actual and continuous contact.

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* Journal of Botany, 1893.

After hybrids, the question of species naturally occurs to one. No one ever has, and probably never will, be able to define what constitutes a species. Mr. H. C. Watson, in his various works on the geographical distribution of the British Flora, attacks the species maker very severely, but he owns it is because it interferes with the collation of other Floras, and with the certainty of the plants so-called being separated by other botanists, and so leading to errors in recorded distribution. The difference between a species of Bentham, and one of Gandoger is very great, and while the one overlooks natural distinctions, the other creates impossible differences. Looking through Dr. Morong's Monograph with these matters before one, what seems to present itself, is; that in the other genera, such as *Ruppia*, and *Zannichellia*, Dr. Morong is less given to divide than in *Potamogeton*, yet if we carefully contrast the characters of *P. pectinatus*, and *P. latifolius*, Morong, they seem less striking than those between some of the above named two genera.

We miss "*P. plantagineus*, Du Croz, var. *Jamaicensis*," Griseb. which occurs in St. Domingo, and Hog Island, Bahamas fide Baker in Herb. Kew. I have not seen this variety in fruit, though the general habit and texture of leaves are certainly like Du Croz, plant, which, however, must bear the name of *P. coloratus*, Hornm. (1813).

P. occidentalis, Sieb., *P. fluitans*, Griseb, is another not named, occurring in Porto Rico; St. Domingo, Jamaica, Martinique and Cuba.

Dr. Morong considers me in error in saying "I believe *P. Nuttallii*, Cham., to be *P. Oakesianus*, Robbins." Perhaps he is right, but I have never yet been able to trace the specimen on which Chamisso founded the species.

The query as to the name *P. Claytonii*, Tuck., must bear will, I think, be disposed of by its being hereafter found that it is represented by *P. ephydrum*, Rafinesque (1808); if so, this will long antedate any other name.

I am thoroughly in accord with the writer in retaining at present Tuckerman's *P. lonchites*. It has yet to be shown what the two or three? forms passing under the name of *P. fluitans*, Roth, in Europe represent; and though a certain amount of feeling has been imparted into the *fluitans* discussion, this neither helps on the truth or theme; only patient work will elucidate these difficulties. But in the next, *P. Faxoni*, I cannot agree with Dr. Morong. Certainly different plants have been distributed, with but two specimens seen by me, and on which I grounded the opinion quoted by Dr. Morong, the upper leaves might well have been taken off *P. Claytonii*, and the leaves were about identical with Irish specimens of *rufescens;* while later specimens I am unable to seperate from *lonchites.*

The hybrid difficulty is well shown by *P. spathulæformis*, Morong. Here what certainly seems a certain amount of injustice to Dr. Morong comes in, because the mere fact of publication by Mr. Fryer of Dr. Morong's herbarium name of *P. varians* constitutes the name of the plant without doubt, if recognized as a species, and we must write *P. varians*, Fryer.

As to *P. Illinoensis*, I quite agree with Mr. Fryer in joining this to the *lucens* group, in contradiction to Dr. Tiselius, who puts it to *P.* (*fluitans*) *lonchites.*

The very puzzling specimens from Wenham Pond, Mass., would, I think, be placed to *P. undulatus*, Wolfgang (*P. perfoliatus* × *crispus*, according to Mr. Fryer); but here comes in a very important question: supposing this to be an admitted fact, and also admitting that *P. crispus*, L., is an introduced plant to U. S. A., then the Wenham plant must be a very recent production of hybridity; the plant will well bear careful study.

It would be a matter of some interest to trace back to the earliest date possible the specimens of *P. crispus* gathered in North America; my friend, N. C. Melvill, has a specimen from "Philadelphia, 1841–2," gathered by "Gavin, Wakon and Kilvington." In marking a map of the world (on Mercator's projection) with the localities of *P. crispus*, it will at once be seen that, leaving the United States localities out, all fall within the right hand side of the 10° of west longitude. On the one hand, the British Isles seem the nearest to North America; on the other, Queensland in Australia. I have not seen it from New Zealand. It is certainly the most likely species to become transported to other lands, by its hardened winter-buds, which will equally bear exposure on dry mud or being frozen in ice. My friend, Mr. Straher, informs me that he finds that wherever horses have access to ponds there *P. crispus* is found, but where they are fenced round and not accessible to them, he has never found it; this is the result of the examination of a large number of ponds in Surrey. I cannot myself say I have ever noticed this, and it should be verified over a larger extent of country.

Dr. Morong makes the *P. pusillus*, var. *major*, Fries, into a species, under the name of *P. major* (Fries) Morong. To this I cannot assent, as there is already an undoubted specific name in *P. Friesii*, Ruprecht, of which I have seen numerous specimens from Ruprecht's own hand. I cannot say that I see the need of dropping *P. hybridus*, Michx., because Pentagna (not Thuillier), in Inst. Bot. 2, p. 289, 1787, so named a plant which is not Michaux's.

P. pectinatus, L., and its allied species, or what we choose to call them, will give plenty of work to botanists for some time.

Applying Dr. Morong's own test, his name *P. latifolius* is not admissible, as Robbins overlooked that there was already a *P. pectinatus*, var. *latifolius*, Meyer, Ch. Hann (1836), therefore his name could not be admitted, and being an error at first must not be reproduced.

There are some forms of *pectinatus* that the author has not entered, *i. e.: P. tenuifolius*, H. B. K., "New Mexico;" *P. angustissimus*, H. B. K., "Mexico," and *P. vaginatus*, Turcz., "Saskatchewan, Bourgeau, 1858." *

Doubtless the genera *Ruppia* and *Zannichellia* will bear further study the world over. Under *Zostera* there is another innovation in nomenclature that we cannot pass by. If Dr. Morong in 1886 was uncertain of the rank his *Z. latifolia* should bear, and he does not feel certain until 1893 of its specific rank (or anyhow has not published so), then I maintain that Watson's *Z. Pacifica* (1891) must take precedence.

Lastly, but not leastly, are the plates to be named; how they were done, and the Monograph produced at the price is a puzzle only our good friends themselves can solve.

That they will be of immense use in America especially, goes without saying; the large majority of them are characteristic of the forms they represent; to me, the least so, is that of *P. confervoides*, Reich. (*P. Tuckermanni*, Robbins). Doubtless Dr. Morong meant them to be popular (I mean in the scientific sense, not paste and scissors one), and they fully bear out these requirements. I warmly congratulate my good friend on this publication, and trust that at no distant date a second edition may be called for, and if so, we in Europe will do our best to help its author. The domain of science is the seeking of truth; and petty jealousies are the most miserable outcome possible of it—this all who love nature for herself should ignore.

ARTHUR BENNETT.

Newfoundland and Labrador Plants. A. C. Waghorne (pp 3. 1893).

This is a prospectus of sets of plants collected by Rev. Mr. Waghorne in Newfoundland and on the Labrador, and now offered for sale. A list of the species of *Sphagnum* is appended. His address is New Harbor, Newfoundland.

Notes on Canadian Bryology. N. C. Kindberg (Ottawa Nat. vii. 17-23). *Andræa sparsifolia*, Zett. var. *sublævis*, *Dicranoweisia obliqua*, *Dicranella polaris*, *D. cerviculatula*, *Leptotrichum tomen-*

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* Kihlman in Bot. Notiser, p. 85 (1887).

tosum, *Racomitrium fasciculare*, Brid. var. *haplocladon*, *Mnium glabrescens*, *Leskea Moseri*, *Anomodon platyphyllus*, *Pseudoleskea atricha*, *Thuidium pseudo-abietinum*, *Th. abietinum pachycladon*, *Isothecium myosuroides brevinerve*, *and I. hylocomioides*, *Eurhynchium subscabridum*, *E. subintegrifolium*, *E. Revelstokense*, *E. serrulatum ericense*, and *E. hispidifolium*, *E. pseudoserrulatum*, *Raphidostegium pseudorecurvans*, and *Hypnum Alaskæ* are described as new.

Notes on Mexican Travel i. ii. iii. C. G. Pringle (Gard. & For. vi. 172, 182, 203).

Notes on North American Trees, xxx. C. S. S. (Gard. & For. vi. 130).

The author claims *Anamonis dichotoma* as the older specific name for the tree known as *Anamonis punctata.*

Notes on the Hardwood Trees of Illinois. J. Schneck (Hardwood iii. No. 6).

Notes on the Staten Island Flora. Wm. T. Davis (Proc. Nat. Sci. Assoc. Staten Island, April 8, 1893).

Nouvelle Note sur l'Aciachne. H. Baillon (Bull. Mens. Soc. Linn. Paris, i. 1073).

Novitates occidentales—II. Edw. L. Greene (Erythea, i. 105–107). *Lathyrus violaceus*, *L. lætiflorus*, *Tellima tripartita*, *Tissa Talinum* and *T. valida* are characterized as new.

Passiflora cærulea.—The Tendrils of. D. T. MacDougal (Bot. Gaz. xviii. 123–129).

This is the second part of the paper, continued from the same journal, vol. xvii. p. 205).

Quercus macrocarpa—The over-cup Oak. J. T. Rothrock (Forest Leaves, iv. 22, illustrated).

Ranunculaceæ—A Comparative Study of the Roots of. Fred. B. Maywell (Bot. Gaz. xviii. 97, cont. from p. 47 with two plates).

Rhipsalis—Beschreibungen neuer Arten der Gattung. K. Schumann (Monats. Kakteenk. iii. 33).

Rhodochytrium, nov. gen. Eine Uebergangsform von den Protococcaceen zu den Chytridiaceen. G. A. Lagerheim (Bot. Zeit. li. 43, with one plate).

Rytidosperma—Sur le. H. Baillon (Bull. Mens. Soc. Linn. Paris, i. 1088).

Salix balsamifera. O. A. Farwell (Gard. and For. vi. 149).

Segregation of Trees—On the Local. Robert Ridgway (Gard. and For. vi. 148).

Solanum nigrum. L.—Sulle forme di. A. Goiran. (Bull. Soc. Bot. Ital. 1893, 180).

Southern Appalachian Hardwoods. III. H. B. Wetzell (Hardwood, iii. Nos. 5, 6).

Spore—The Limitation of the Term. Conway MacMillan (Bot. Gaz. xviii. 130–134).

Table Mountain Pine—The. Thos. C. Porter (Gard. and For. vi. 204). Note on the distribution of *Pinus pungens.*

Tæniopteroid Fern and its Allies—A New. David White (Bull. Geol. Soc. Am. iv. 119–132, pl. 1).

A new species, *Tæniopteris Missouriensis,* from the Lower Coal Measures of the Carboniferous in Henry Co., Mo., is described and figured, with notes on its probable generic and specific allies, and a diagramatic presentation of the supposed genæology and relations of the group, beginning with the Lower Devonian *Megalopteris* and terminating, in its greatest extension, with *Danæa* in the Jurassic. It appears to be intermediate in its characters between *Tæniopteris* and *Alethopteris.* A. H.

Thuidium intermedium, Philibert (Revue Bryologique, xx. 33, 1893).

Six pages are devoted to the group of *Thuidium tamariscinum* including *T. delicatulum, T. recognitum,* and a new species, *T. intermedium,* characterized by revolute leaf margins like *T. delicatulum,* with the veins of the stem-leaves disappearing in the middle of the leaf, the terminal cell papillose, as in our two American species, the perichætium not ciliate as in *T. recognitum,* and the annulus persistent, of indistinct, small, square cells as in *T. tamariscinum.* An excellent key accompanies the description. E. G. B.

Tillandsia angusta der Flora Fluminensis—Die. Fritz Müller (Ber. Deutsch. Bot. Gesell. x. 447–451).

A description of this Brazilian plant referred by Mez to the genus *Hohenbergia.*

Trematocarpus—Ueber der Gattung. A. Zahlbruckner (Verh. k. k. zoöl.-bot. Gesell. Wien, xliii. Sitzungs. 6, 7).

Trichopila sanguinolenta (Bot. Mag. t. 7281). Native of Equador.

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Vegetation of Hot Springs. J. Christian Bay (Bot. Gaz. xviii. 187–189).

Vegetation of the Summit of Mount Hamilton. Edw. L. Greene (Erythea, i. 77–97).

A list of 212 species collected and observed about the Lick Observatory. Prof. Greene refers *Gomphocarpus tomentosus*, A. Gray, to *Asclepias* as *A. Californica*, and makes several other changes in nomenclature. The enumeration abounds in critical notes.

White Variety of the Fireweed. A. F. Winn (Can. Record Sci. v. 300).

Note on *Epilobium spicatum* forma *canescens*.

Umbelliferæ—Studies in Californian. II. W. L. Jepson (Erythea, i. 62, 63).

Yuccas and their Pollination—Further Studies of. Wm. Trelease (4th Ann. Rep. Missouri Bot. Gard. 181–226; twenty-three plates).

Record of a large number of observations on various species, supplementary to the work of Dr. Engelmann and Prof. Riley. The name *Y. glauca*, Nutt in Frazer's Cat. (1813) is adopted in place of *Y. angustifolia*, Pursh (1814).